

The Ethics of Computer Game Design

Miguel Sicart

IT University of Copenhagen
Rued Langgaards Vej 7
2300 København S
72185001
miguel@itu.dk

ABSTRACT

Every choice implies responsibility. Responsibility implies ethical values imprinted in those choices. Computer games have been considered “a series of interesting choices”¹. Is it possible to think of games as moral objects? Or, more precisely: is the design of computer games morally accountable? Computer game design is the craft of gameplay, the challenge of creating a balanced and enjoyable game. In a way, computer game design is the art of creating interesting, entertaining choices. What are the ethics this activity imprints in computer games? What are the ethics of game design?

This paper will argue for the analysis of computer games as moral objects because of the ethical values that can be imprinted in their design. Understanding the importance of design as a creative ethical activity, will allow the analysis of computer games’ rethorics and the ways they are or could be used for conveying engaging ethical experiences. Understanding the morality of the digital expression can show us both the ways for new expressions, and the moral being of computer game as a form of art.

Keywords

Computer games, Computer game design, ethics, philosophy

INTRODUCTION

Let’s start by imagining a labyrinth in which we have voluntarily agreed to enter. As we walk in that labyrinth, we have to choose directions, retrace our steps, and try to find an exit. In a sense, our quest is a topographical one: we have to elaborate the right map to the exit. If we succeed in creating that map, we will leave triumphantly the maze. If we fail, we have lost to the labyrinth.

¹ Sid Meier, quoted in Rollings and Adams: 2003, p. 200

A labyrinth is a set of potential routes, some of which are correct and some are dead ends. The conditions by which the successful map is discovered can be different, according to how the maze is designed. It is possible to imagine a labyrinth in which the correct route is clearly visible, as it is possible to imagine a labyrinth in which the choice for a route implies a moral decision. Making a certain turn could mean leaving behind your morality, engaging in immoral acts; acts that take place and meaning inside the labyrinth.

The architecture of a labyrinth determines not only the conditions for success, but also the nature of the choices that need to be taken in order to succeed. A labyrinth can be a moral object. Its design can have imprinted moral values that are experienced by the user of the labyrinth. The user of a (moral) labyrinth experiences not only the physical topology of the maze, but also its moral architecture. In other words, a labyrinth's architecture, its very physicality can be embedded with moral values.

This paper will argue for the analysis of computer games as moral objects because they can be designed with values embedded in their design, like a moral labyrinth. The player experiences these values as power structures that determine not only her identity inside the game, but also what is correct and virtuous inside that game. I will argue that games are ethical power structures experienced by players, structures that convey, via design, values and moral statements. The morality of computer games lies not only in *what* they tell, but also in *how* it is told. Games are agent systems with ethical values are softwired in the design that largely determine the player's experience.

Games are designed objects. Design is power. What are the ethics behind that power?

ERGODICS, CODE, AND OTHER LAWS OF COMPUTER GAME DESIGN

In order to understand the fundamental premises of the ethics of game design, it is necessary to explain how computer games are designed objects. To do so, the concept of ergodic arts² and the notions of code and architecture will give an understanding of how games operate as designed experiences.

All games are ergodic objects. An ergodic work of art “is one that in a material sense includes the rules for its own use, a work that has certain requirements built in that automatically distinguishes between successful and unsuccessful users”³. Ergodicity as such lies in the material organization of the artifact. Ergodics as a code, the software code, is the first condition for ergodicity of the artifact. Without the materiality of the code there is no ergodicity. Code creates the architecture of the ergodic experience, “the rules for its own use”.

Before proceeding, it is necessary to clarify the use of the concepts of architecture and code. Lawrence Lessig's *Code and other Laws of Cyberspace* inspires the use of the concepts of code and architecture: “[...] an analog for architecture regulates behavior in cyberspace – *code*.

² Aarseth 1997

³ Aarseth: 1997, p. 179

The software and hardware that make cyberspace what it is constitute a set of constraints on how you can behave”⁴.

Code is the material string of commands that constitute an ergodic artifact. Architecture is the implementation of that code in a concrete experience⁵: “[...] I have taken from architecture its insight about the relationship between the built environment and the practices that environment creates” (*op. cit.* p. 239).

What is code and what is architecture, then, in computer games? Code is the material existence of the game before it is played, from the design documents to the strings of programming language. Architecture is the experience of the code by the users. In Aristotelian terms, code is the game *in potentia*, and the architecture is the game *in actio*. Code regulates the possibilities of the architecture; it determines the way it can evolve.

The ergodic artifact “has certain requirements built in that automatically distinguishes between successful and unsuccessful users”; it evaluates the performance of their users, establishing criteria for success. This success is intimately related with a tension between the “visible” part of the ergodic artifact, and the “invisible” aspects. What does this definition of ergodic artifacts say about their moral nature? One of the most relevant aspects is the fact that ergodicity is located in the code level. Without a certain material predisposition, in this case the code, we do not have ergodic artifacts. Code implies an ergodic architecture of experience, creating constraints and possibilities, determining choices and options. It is the code what ultimately regulates the architecture of the game, and therefore where the ethics of computer games starts.

The game *XIII* (Dargaud/UbiSoft: 2003) is an example of how code regulates the architecture of the game, embedding it with moral values. The game puts the player in the role of an amnesic secret agent of moral ambiguity. The narrative plays with that moral ambiguity, but in some sequences of the game, killing a police officer implies a game over, clearly determining the ethical values embedded in the main character. *XIII* is hardwired with a series of values that are enforced by the code, and that overrule the narrative sequence we are presented. The architecture of the game is condition by moral decision taken at the code level, which determine the way we experience the game as players.

A game is then an ergodic artifact that creates a certain experience determined by the code, being code the material incarnation of the game design as determined before the player(s) experience it⁶. Code and architecture are moral instances of game design, determining the way by which a game can enforce a series of ethical values.

⁴ Lessig: 1999, p. 89

⁵ Experience understood in a phenomenological sense: Heidegger: 1988, Merleau-Ponty: 2005

⁶ “For play has its own essence, independent of the consciousness of those who play” (Gadamer: 2004, p. 103)

CODE AND ARCHITECTURE AS ETHICAL INSTANCES

A classic example of the politics and values embedded in the designs of objects is Robert Moses' designs for hanging overpasses in Long Island, created with the intention of not allowing busses to use them, what would theoretically prevent lower classes from enjoying leisure facilities⁷. This example shows us that any object can be designed with a value system in mind, and that those values can be imprinted in the very design of the object, permeating then to the experience of that artifact. Computer games are designed objects; therefore they can be moral objects. And that means that their code and architecture are in fact ethical instances.

The game mechanics are based on a code that is experienced as a game architecture by a number of players. Both code and architecture are accountable for the discourse the ergodic artifact is rewarding. Because the successful experience of such architecture is rewarded, there is a certain set of choices imposed by the code. The architecture of the game is determined by the values embedded in the code, as seen in the winning conditions, or in the success criteria. But the architecture also determines a series of values in the case of multiplayer games, where the community of players can embed values to the architecture of the game⁸.

In computer games, code upholds the rules, and creates the virtual environment. When a player experiences a game, an architecture determined by the code (rules and design) is created, and its foundations depend on the ethical values embedded in the code. Code creates a virtual world and the rules by which the player(s) engage in a ludic activity. The virtual world is the architecture created by the code and the interaction with the player.

It is possible to say, then, that computer games, as a designed ludic experience, are moral objects dependant of the values embedded in the code, and the way they are experienced as architecture. In other words, the ethical values of virtual spaces are hardwired in the code, and softwired in the architecture, as it depends on the player (and the player communities) enacts or rejects those values.

As an ethical instance, code seems to be more important for it upholds the rules of a game, embodying the winning conditions, and forbidding deviant gameplay. Code says what is possible and what is not beyond discussion. Code determines what is virtuous in order to achieve the goals of the game, and what is unacceptable behavior, both from a moral point of view, and from an existential point of view⁹. Code is the law in ergodic arts, a law that is unambiguous,

⁷ Example taken from Winner: 1986

⁸ An example of this can be seen in the multiple behavior agreements that players of online FPS such as *Battlefield 1942* create in order to ensure a "correct" enjoyment of the game. Game teams (<http://www.team-ava.com/coc.php>), Netcafes (http://bf1942.boomtown.net/en_uk/articles/art.view.php?id=7553) and even anonymous users (<http://www.petitiononline.com/eadice02/petition.html>) contribute to the creation of a set of community values that spawn and relate to those the game code potentially contains.

⁹ Behaviours that are not possible within a game do not exist: they are not even mere

impossible to avoid, and conclusive. And this law implies ethical values.

Let's take the example of *The Sims*. Even though this software product has been defined as a toy, and it has been praised for its apparent lack of goals, it is possible to perceive some winning conditions upheld by the code. I have argued elsewhere¹⁰ that *The Sims* presents a highly ideologized vision of social environments, not only in the world it represents and the way it is represented, but also in a code level. The game does not allow you to be unhappy. If you drive you Sim to the darkest corners of simulated existence, the system will take control and will not allow you to play successfully until your Sim has recovered balance.

The code of *The Sims* does not contemplate as a possible behavior the unhappiness of the Sim (as it does not allow for, let's say, corner furniture). The code upholds what it can be done, and what it cannot be done. In words of Lawrence Lessig: "The code displaces law by codifying the rules, making them more efficient than they were just as rules"¹¹. Not only more efficient, but also insurmountable without materially changing the code.

In other words, the way an ergodic artifact is coded, its "material ergodicity", implies ethical values that are imprinted in the code strings, and that permeate the architecture of the ergodic artifact as experience. To understand the ethical nature of ergodic artifacts we have to analyze not only the architectural level, but also the code level. In the dialogue between the ergodic experience of a user and the invisible code that delimitates and generates that experience, ethical values are transmitted and upheld. There lies the ethical nature of ergodic artifacts: in the relations between the code and the architecture.

The ethical values of ergodic artifacts are encoded and performed as architecture, but they are also designed to operate that way. Code is not natural, it is a human constructed artifact designed to provide an experience in a number of imagined ways. In words of Salen & Zimmerman, "design is the process by which a *designer* creates a *context* to be encountered by a *participant*, from which *meaning* emerges"¹². What kind of system, what kind of structure are we talking about?

It is a structure in which the user enters voluntarily, accepts some rules, and is constrained by the architecture and the code. And if these constraints succeed, the user assumes them, engaging in a tense internalization of these rules and norms. In other words, the ergodic structure is a power structure.

COMPUTER GAMES AS POWER STRUCTURES

possibilities.

¹⁰ Sicart: 2003

¹¹ Lessig: 1999; p. 130

¹² Salen & Zimmerman: 2003, p. 41

A computer game is a designed system that creates predictable experiences. It is a system that has to be accepted by the player, and that imposes constraints to the experience it generates. Some of those constraints are punished by the system (within its own rules); some are rewarded (win/lose conditions). The player accepts these rules, and acts within those architectural constraints. A computer game operates, then, as a power structure.

What is a power structure, in this context? It is Michel Foucault's theories those that better describe the way artifacts like as games enable the creation of power structures¹³. First, it is needed to remind that power in Foucault's philosophy is not necessarily negative¹⁴, but a condition for knowledge. We all live immersed in power structures, power relations that are determined by our practices, our culture, our laws, the political systems we choose, our bodies and our relationships with the other(s). Power is a net of mechanisms that ensure domination of one of the nodes over other(s)¹⁵, but domination need not be negative. In this case, domination is accepted and produces the pleasures of the computer game.

When a user enters or experiences an ergodic architecture, a power relation is freely established. Free on both sides¹⁶, as the player is free to enter and leave the game, but the game is also free to punish, or exclude, a user¹⁷. This is, of course, a radical approach, as it argues for a very extensive agency for computer games. As a matter of fact, if computer games are to be considered ethical objects, they have to be so by understanding them as moral agents. Computer games, as designed systems that can embody ethical values, have a certain degree of agency, which explains why they create a power relation with the user(s) in the terms suggested by Foucault.

Artificial agency is a recurrent topic in the field of Information Ethics, and it a valuable approach to understand the ethics of computer games. It is possible to think of artificial agency in moral ways, as long as there is an artificial agent. An artificial agent is roughly said a state machine¹⁸, and game theory has long proven that computer games are in fact state machines¹⁹.

¹³ Needless to say, Foucault's influence in the theoretical body of STS makes his theories even more appropriate when we are referring to technology.

¹⁴ "Far from preventing knowledge, power produces it" (Foucault: 1980, p. 59)

¹⁵ "(...) we must escape from the limited field of juridical sovereignty and State institutions, and instead base our analysis of power on the study of the techniques and tactics of domination" (Foucault: 1980, p. 102)

¹⁶ According to Foucault, a necessary condition for power relations: "(...) there must be at least a certain degree of freedom on both sides" (Foucault: 2000, p. 284)

¹⁷ Software that, for example, punish cheaters (games), or does not allow certain behaviors.

¹⁸ Floridi and Sanders: 2001, 2004

¹⁹ Juul: 2004

Claiming that a computer game is an agent that engages freely in a power relation determined and ruled by its code is a radical perspective on what games are and how they operate.

The fact that computer games are artificial agents means that the code of the game acts upon the architecture the players experience in a determinant way. In other words: a game like *Resident Evil 4* (Konami: 2004) is designed to enhance a certain experiences by constraining the player options. Acting upon a free agent that engages in a game means a certain degree of agency, in this case determined by the code, and oriented to create a successful power structure. In a limited, but relevant way, the code of computer games is an agent that upholds certain ethical values, creating knowledge and information flow through the establishment of power structures.

Once the power relation is established, a network of interests is created: the user accepts more or less critically the constraints of the system in order to get knowledge or pleasure. As users we become bearers of that power. There is no ergodicity if we do not accept our role in the system, if we don't experience the architecture. To be the user of an ergodic system is to become a subject, a node in a power structure that imposes limits: "The individual is an effect of power, and at the same time, or precisely to the extent to which it is that effect, it is the element of its articulation"²⁰.

The acceptance and belonging to this power structure is originated by sake of knowledge, entertainment or enjoyment. These ergodic power structures are designed to provide those kinds of pleasures. Successful ergodic artifacts wield a power structure designed to provide a flow experience²¹ that generate knowledge. In any case, computer games are designed to provide a certain experience by acting as a power structure. And it's these pleasures the ones that make the acceptance of the power structure interesting for the user: "what makes power hold good, what makes it accepted, is simply the fact that it doesn't only weight on us as a force that says no, but that it traverses and produces things, it induces pleasure, forms knowledge, produces discourse. It needs to be considered as a productive network which runs through the whole social body, much more than as a negative instance whose function is repression"²².

An appropriate example for this process of engaging in power structures comes from *The Sims*. In this social simulation, in order to achieve the flow experience, we have to accept the game and simulation mechanics. In other words, the architecture of constraints and possibilities has to be accepted by the player in order to engage in a successful experience. This architecture determines that, in order to master the game and explore its possibilities, we have to accept certain behaviors, namely, compulsive consumerism in order to achieve social success. Rebellling against this structure implies an immediate failure in the game, and the user is relieved of her

²⁰ Foucault: 1980, p. 98

²¹ "Flow" is a concept developed by M. Csikszentmihalyi, describing "a condition where self-consciousness disappears, perceptions of time become distorted, and concentration becomes so intense that the game or task at hand completely absorbs us" (Yellowlee Douglas & Hargadon: 2004, p. 204; this article is also a competent approach to the flow concept applied to some ergodic arts).

²² Foucault: 1980, p. 119

duties until the normal architecture of power is reestablished²³. The user of *The Sims* accepts these conditions in order to participate in the experience that the architecture of the game provides. Thus, code, architecture and user engage²⁴ in a relation determined by the power structures upheld by the architecture and the code.

Summarizing, the architecture and code of ergodic artifacts are designed as power structures that have to be accepted freely by the user in order to activate the ergodic network of power by which the knowledge and/or pleasure are experienced.

THE ETHICS OF GAME DESIGN

So far, this paper has argued for the consideration of computer games as moral objects based on their design as power structures and the way they create a experience of their design. These power structures uphold ethical values, constructing architectures of moral choices and constraints. In this section I will outline the ethics of game design by a closer look to concrete examples, applying the previous theoretical argumentations.

The first example is the bestselling game *Grand Theft Auto: San Andreas* (Take Two/Rockstar North: 2004). In this massive, technologically impressive game, the player has to assuming the role of a small time crook involved in the violent gang wars that took place in Los Angeles in the beginning of the 90s. This game promises more than 40 hours of gameplay only to finish the narrative arch, which by no means implies finishing the exploration of the gameworld.

The game is designed to give a relative freedom to the player, who can travel around a vast map in different transportation means, entering different spaces and engaging in different activities. But that freedom is not absolute: the game only opens the full map after completing some narrative, and the players are punished severely if they explore before they are allowed to. And the same happens with breaking the law: crime is easy to commit in *San Andreas*, but the game punishes that behavior by calling the attention of enraged, violent “police officers”. In a sense, the architecture of *San Andreas* gives the player the illusion of an extensive freedom, but that freedom is limited by code restrictions derived from the design of the game. The wide set of choices in *San Andreas* is limited by the values embedded in the code, which are visible through the non played narrative (the main character never consumes drugs), the played narrative (some actions generate predetermined anger from NPCs, like policemen), and the free-roaming gameplay (criminality provoking the police to act). Therefore, the complex architecture of *San Andreas* is rigidly controlled by the values embedded in the code: the ways we can experiment the vast world of the game.

²³ Sicart: 2003

²⁴ It can be quite problematic to assume that the code and the architecture have agency, as the use of the verb “engage” reveals. In order to understand the concepts of artificial agency implicit in this paper, I refer to Floridi & Sanders: 2001 & 2004.

Doom, and almost all FPS since, operates under the same principles of power structures, but the overall outcome is considerably different. *Doom* builds on an architecture in which satisfaction was pursued by the hectic experience of a first person battle to death with monsters in clearly linear and predetermined scenarios. There is no freedom suggested in *Doom*. The code does not allow for more than a sequence of rooms with a fixed amount of enemies (determined by the difficulty level). There are no forking paths, there are no relevant choices: there is only one way of achieving the winning condition, any deviant behavior will be punished with defeat.

Doom's architecture is a reflection of its narrative: one marine against an army of demons. Just like the much posterior *Manhunt* (Rockstar North: 2003), the game's architecture represents the narrative, thus linking the values of the narrative to that of the code. In the case of *Manhunt*, the lack of meaningful choices in the game play reflects the desperate situation to which the main character is driven. In *Doom*, the pioneer of this mirror structures, the code guarantees that the player experiences match the values suggested for the narrative. In that sense, these mirroring structures can become powerful means for rhetoric casual games²⁵.

The simulation *The Sims* builds a rather different architecture. Will Wright tends to be very reluctant when it comes to defining his works as video games: he often refers to them as "software toys", as software products oriented to play activity, rather than to more formal games activities²⁶. And this open-endedness of *The Sims* lays its interest: how to code the relative freedoms and the importance of choices in a simulation of real life?

The Sims is designed as an open-ended universe in which the user can customize the existence of her avatar to a considerable degree: external appearance, fashion, home, furniture, and a wide array of possibilities. But it is not only this superficial aspect of social structures the game represents. More than anything else, *The Sims* is a simulation²⁷. To represent a system by means of another system implies that some aspects of the original system are preserved, while some others have to be eliminated. This actually means a process of selection that might imply ethical statements.

But the case of *The Sims* is more complex. *The Sims* is a toy simulation; a toy world intended to be enjoyed also as an ergodic architecture. The code in *The Sims* determines the ethical values of *The Sims*, projecting them to the architecture. An in that experienced architecture the user accepts as a part of the simulation the limitations imposed by the code. Thus, the user accepts that in the architecture of the simulation, the limited possibilities are a part of the values of the game.

²⁵ The most notorious example of this mirroring patterns is Gonzalo Frasca's *September 12* (<http://www.newsgaming.com/games/index12.htm>), in which the political message of the game is enforced by the conscious, almost brechtian breaking of the gameplay conventions by setting impossible constraints to the player.

²⁶ See Juul: 2004, chapter 3; and Salen & Zimmerman: 2004, pages 126-140, and 300-312

²⁷ My use of the concept of simulation is that of Frasca: 1999 (specially chapters III & IV), and Frasca: 2002; namely, that a simulation is a system that reproduces the behavior of another system, usually less complex.

The Sims might be interpreted not as a simulation of western social life, but the means of production in post capitalist societies. Given this perspective²⁸, the code acts as an propaganda machine, as well as an enforcer of the values it has been hardwired with. It can be said that code in simulations acts as what Althusser has defined as Ideological State Apparatus²⁹, or pervasive and heterogeneous institutions that uphold certain ideologies.

If the rhetoric power of *Doom* is its mirror structure, in which the ethical values proposed by the narrative are actually mirrored by the coded gameplay, the interest of simulations relies precisely in the simulation of the values hardwired in the code of the system through a ludic architecture. In other words, *Doom*'s ethical discourses are sermons, while *The Sims* prefers to be a parable. In both cases, code constructs the architecture of an experience with a set of values that is transmitted via the rhetoric use of freedom and choices for the user.

A more recent example of the ethics embedded in game design comes from *World of Warcraft* (Blizzard: 2005), a MMORPG that takes place in the torn world of Azeroth, where the Horde and the Alliance fight to death. This game is designed to encourage the battle between the two factions by constraining some choices and behaviors. For example, players of different sides (Horde or Alliance) cannot communicate using the chat and they cannot group. Actually, the game will encourage aggression between the different factions by implementing an honor system that will regulate the status of player killers. In other words: *WoW* is designed not to allow any kind of direct cooperation between Horde and Alliance, and that is enforced through design decisions that limit the possibilities of the player.

Furthermore, *WoW*, as almost all other MMORPG is designed to encourage a certain style of play, based on continuous leveling up and competition for owning objects. Even in Role Playing servers, players seem to be interested only in reaching high levels and acquiring rare objects that will give them a certain status, being the role-playing just an excuse for the creation of character backstories. Playing *WoW* as a role player that does not want to engage in leveling up or violent quests³⁰ shows how the game is coded to encourage a certain experience of the world, and other behaviors are not possible or highly difficult to engage in. It is quite complicated, for example, to engage in meaningful role-playing trying to convey ideas such as those proposed by my church experiment when the design of the UI almost punishes its very use (small fonts, awkward onscreen position, not intuitive commands, ...). *WoW* is coded with a certain game experience in mind, and the design boundaries become visible when alternative plays styles that subvert the coded game ethics are attempted.

What are, then the ethics of game design? Computer games are designed objects that create a certain experience largely determined by the way the system is designed. A game can be described as a code (a designed system for ludic interaction) that creates an architectural experience with users that engage in a power relation. Games can embed ethical values in their

²⁸ Which I have introduced elsewhere (Sicart: 2003).

²⁹ Althusser: 2001

³⁰ Actually, that is the core element of an experiment I am carrying out with my spring 2005 Computer Game Theory class under the name of "Church of the Three Values": more information available at www.churchofthe3values.com

code, values that are projected in the architecture towards the user(s). Therefore, the act of creating and crafting the code of a game is a moral act. The values embedded in the system are a crucial element in the ethics of game design.

In fewer words: to design games is a moral activity. The values consciously or unconsciously embedded in the design determine the basics of the ethics of the game, and cue the experience and affordances of the user(s) of the system. Games are ethical if and because their design is a moral system, and crafting those systems is or can be a moral action.

CONCLUSIONS

This research has tried to determine in which ways computer games can be morally accountable. As a result, I would say that a computer game is morally accountable not only for the virtual world it creates, but also by the ways the experience of that virtual world is designed. It is the fact that computer games are designed objects what makes them ethically accountable, because it is their design what makes them powerful rhetoric devices.

Game designers seem to have discovered the interest of moral choices. Thus, they are building games in which morality apparently affects the gameplay and aesthetics of the game. The user's character "is" evil or good according to some internal "moral-o-meter", and the appearance of the avatar changes accordingly, like in *Knights of the Old Republic* (BioWare: 2002) or *Fable* (Lionhead Studios: 2004).

The problem with this approach is that morality is not algorithmical. Ethics cannot be evaluated with a fuzzy numeric quantification hardwired in the code. Actually, what designers are including is not morality, as the choices have little or no relevance in the architecture of the game. What these games offer is a morality that reflects in the narrative of the game, but not in its experience. In other words: it is not about good or evil decisions, but algorithmical decisions, with no moral value in the experience of the game. It is not deep; it is a poor shadow of moral responsibility, and thus, a moral mistake in itself. Morality induces reflection. By calculating it as any other mathematical value, these game designs ignore the depth and importance of moral decision-making. These choices are not meaningful choices, but a narrative vision on gameplay as an ethical device, and thus a limited perspective on games as ethical objects and experiences.

I have argued for computer games as ethical objects because they are designed objects, because through their design moral values can be conveyed and experienced. Part of my inspiration comes from the poet Seamus Heaney, who wrote: "the form of the poem (...) is crucial to poetry's power to do the thing which always is and always will be to poetry's credit: the power to persuade that vulnerable part of our consciousness of its rightness (...) the power to remind us that we are hunters and gatherers of values (...)"³¹. Likewise, I believe the design of computer games is crucial to their power for creating experiences that can convey values and pleasures. Like poetry, games are privileged expressions of humankind. Like poetry, games are arts: ut ludus, poiesis.

³¹ Heaney: 1996

REFERENCES - LITERATURE

Aarseth, Espen. *Cybertext. Perspectives on Ergodic Literature*. Baltimore: The John Hopkins University Press, 1997.

---. "Allegories of Space: The Question of Spatiality in Computer Games." *Cybertext Yearbook 2000*. Ed. Markku Eskelinen, and Raine Koskimaa. Jyväskylä: University of Jyväskylä, 2000.

---. "Aporia and Epiphany in Doom and the Speaking Clock: Temporality in Ergodic Art." *Cyberspace Textuality*. Ed. Marie-Laure Ryan. Bloomington and Indianapolis: University of Indiana Press, 1999. 31-41.

---. "Beyond the Frontier: Quest Computer Games as Post-Narrative Discourse." *Narrative across Media*. Ed. Marie-Laure Ryan: University of Nebraska Press, 2003.

---. "Computer Game Studies, Year One." *Game Studies* 1.1 (2001).

---. "Genre Trouble: Narrativism and the Art of Simulation." *First Person. New Media as Story, Performance, and Game*. Ed. Noah Wardrip-Fruin and Pat Harrigan. London & Cambridge: The MIT Press, 2003. 45 - 55.

---. "On the Morality of Artificial Agents." *Minds and Machines* (2004).

---. "The Game, the Player, the World: Looking for a Heart of Gameness." *Level Up. Digital Games Research Proceedings*. Ed. Marinka and Joost Raessens Copier. Utrecht: University of Utrecht, 2003. 30-45.

---. *Discipline and Punish*. 1975. Trans. Alan Sheridan. London: Penguin, 1991.

---. *Ethics. Subjectivity and Truth. Essential Works of Foucault 1954-1984. Vol. 1*. 4 vols. London: Penguin, 1997.

---. *Half-Real: Video Games between Real Rules and Fictional Worlds*. Copenhagen: IT University of Copenhagen, 2004.

---. *Power. Essential Works of Foucault 1954-1984*. Ed. James D. Faubion. London: Penguin, 2000.

---. *The Range of Interpretation. The Wellek Library Series*. New York: Columbia University Press, 2000.

Althusser, Louis. *Lenin and Philosophy and Other Essays*. Trans. Ben Brewster. New York: Monthly Review, 2001.

Aristotle, *Nicomachean Ethics*, Mineola: Dover 1998

Atkins, Barry. *More Than a Game. The Computer Game as Fictional Form.* Manchester and New York: Manchester University Press, 2003.

Caillois, Roger. *Man, Play and Games.* 1958. Trans. Meyer Barash. Urbana and Chicago: University of Illinois Press, 2001.

Christopher, Elizabeth M. "Simulations and Games as Subversive Activities." *Simulation and Gaming* 30.4 (1999): 441-55.

Copier, Marinka and Joost Raessens. "Level Up. Proceedings of the Digital Games Research Conference 2003." *Level Up.* Utrecht: University of Utrecht, 2003.

Costikyan, Greg. "Games Don't Kill People -- Do They?" *Salon.com* June 21 1999 1999.

Crawford, Chris. *On Game Design.* Indianapolis: New Riders, 2003.

Dreyfus, Hubert L. *On the Internet,* London and New York: Routledge, 2003.

Floridi, Luciano & J.W. Sanders. "Artificial Evil and the Foundation of Computer Ethics." *Ethics an Information Technology* 3.1 (2001): 55-66.

Foucault, Michel. *Power/Knowledge: Selected Interviews & Other Writings 1972-1977.* Ed. Colin Gordon. New York: Pantheon Books, 1980.

Gadamer, Hans-Georg. *Truth and Method.* London & New York, Continuum: 2004

Heaney, Seamus. Nobel Prize Lecture. 1996 (available online: <http://nobelprize.org/literature/laureates/1995/heaney-lecture.html>)

Heidegger, Martin. *The Basic Problems of Phenomenology.* Bloomington & Indianapolis, Indiana University Press: 1988

Iser, Wolfgang. *The Act of Reading. A Theory of the Aesthetic Response.* London: The John Hopkins University Press, 1978.

Jameson, Fredric. *Postmodernism, or, the Cultural Logic of Late Capitalism.* Post-Contemporary Interventions. Durham, NC: Duke University Press, 1991.

Joyce, Michael. *Afternoon: A Story.* Cambridge, Massachusetts: Eastgate Systems, 1990.

Juul, Jesper. "The Open and the Closed: Games of Emergence and Games of Progression." *Computer Game and Digital Cultures Conference Proceedings.* Ed. Frans Mäyrä. Tampere: Tampere University Press, 2002. 323-29.

Koster, Raph. *A Theory of Fun for Game Design.* Arizona: Paraglyph Press: 2005

Kücklich, Julian. "The Playability of Computer Games Vs. The Readability of Computer Games: Towards a Holistic Theory of Fictionality." *Level Up: Proceedings of the Digital Games Research Conference.* Ed. Marinka and Joost Raessens Copier. Utrecht: University of Utrecht,

2003.

Lessig, Lawrence. *Code and Other Laws of Cyberspace*. 1999. New York: Basic Books, 1999.

Merleau-Ponty, Maurice, *Phenomenology of Perception*. London and New York: Routledge, 2005

Norman, Donald A. *The Design of Everyday Things*. New York, Basic Books: 1988

Ondrejka, Cory. *Living on the Edge: Digital Worlds Which Embrace the Real World*. 2004. Available: <http://ssrn.com/abstract=555661>. June 5 2004.

Penny, Simon. "Representation, Enaction, and the Ethics of Simulation." *First Person. New Media as Story, Performance, and Game*. Ed. Noah Wardrip-Fruin and Pat Harrigan. London & Cambridge: The MIT Press, 2003. 73-84.

Reynolds, Ren. *Playing a "Good" Game: A Philosophical Approach to Understanding the Morality of Games*. 2002. Available: <http://www.igda.org/articles/rreynoldsethics.php>. 3/2 2004.

Rollings, Andrew and Ernest Adams. *On Game Design*. Indianapolis: New Riders, 2003.

Rouse III, Richard. *Game Design: Theory and Practice*. 2002. Second ed: Wordware Publishing, 2004.

Sicart, Miguel. "Family Values: Ideology and the Sims." *Level Up. Proceedings of the Digital Games Research Conference 2003*. Ed. Marinka and Joost Raessens Copier. Utrecht: University of Utrecht, 2003. CD-Rom.

Wardrip-Fruin, Noah and Pat Harrigan, ed. *First Person. New Media as Story, Performance, and Game*. London & Cambridge: The MIT Press, 2003.

Winner, L. "Do Artifacts Have Politics?" *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press, 1986. 13-39.

Yellowlee Douglas, Jane & Andrew Hargadon. "The Pleasures of Immersion and Interaction." *First Person. New Media as Story, Performance, and Game*. Ed. Noah Wardrip-Fruin and Pat Harrigan. London & Cambridge: The MIT Press, 2004. 192 - 206.

Zimmerman, Eric and Katie Salen. *Rules of Play - Game Design Fundamentals*. Cambridge: The MIT Press, 2003.

REFERENCE – GAMES

BioWare, *Knights of the Old Republic*, LucasArts, 2003

Blizzard, *World of Warcraft*, Blizzard 2005

ID Software: *Doom*, GT Interactive, 1993

Ion Storm: *Deus Ex*. Eidos Interactive 2000.

Kinematic Collective: *9/11 Survivor*, selectparks.net
(http://www.selectparks.net/modules.php?name=Downloads&d_op=viewdownloadetails&lid=5&title=911%20Survivor)

Konami: *Resident Evil 4*, Konami 2005

Lionhead Studios: *Fable*, Microsoft Game Studios, 2004

Maxis: *Sim City*, 1989.

Maxis: *The Sims*. Maxis, 2000.

Newsgaming.com, *September 12*, newsgaming.com 2003

Pazhitnov, Alexey: *Tetris*. Spectrum Holobyte, 1985.

Rockstar North, *Manhunt*, Take-Two Interactive Software, 2003

Rockstart North, *Grand Theft Auto: San Andreas*, Take Two Interactive Software 2004

The Counter-Strike Team, *Counter-Strike*. The Counter-Strike Team, 2000.

Ubisoft: *XIII*. Dargaud 2003

Valve Software: *Half-Life*. Sierra 1998.

Verant Interactive: *EverQuest*. Sony Online Entertainment, 1999.